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| 10/551,393 | 06/30/2006 | Masanori Omote | 450100-05036 | 3343 |
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| 02/05/2010 | | | | |
| EXAMINER | | | | |
| MARC, MCDIEUNEL | | | | |
| ART UNIT | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,393

Applicant(s)

OMOTE, MASANORI

Examiner

MCDIEUNEL MARC

Art Unit

3664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-17 are pending.
2. The rejection to claims 1-13 under U.S.C. 112, second paragraph had been withdrawn.
3. The rejection to claims 1-13 under 35 U.S.C. 103(a) as being unpatentable over **Glenn et al.** (U.S. Pat. No. **6,763,282**) in view of **FRASER ET AL.** (General Aviation Safety Information Leaflet 2002) is maintained.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Glenn et al.** (U.S. Pat. No. **6,763,282**) in view of **Fraser et al.** (US 20030087607 A1).

As per claim 1, 4 and 5, **Glenn et al.** teaches a system and an associated robot (see abs., particularly the robot) that uses impulse radio technology (see abs., particularly “impulse radio technology”) having an autonomous robot (see abs., particularly the robot) apparatus which communicates with a communication apparatus by radio and independently determines an action in accordance with an instruction from a user or a surrounding environment (see figs. 9-11 and 13, wherein receiving instruction from a user is inherent; note that element 906 of the control station in figure 11 communicates with the robot and the robot communicates vice versa with the control station), the robot (see abs., particularly the robot) apparatus comprising: measuring means for measuring the quality of communication of radio signals received from the communication apparatus (see col. figs. 9-10, wherein the control station has interpreted as means for measuring the quality of the communication and col. 19, lines 19-25, particularly “Moreover, traditional control stations use either standard radio or infrared electromagnetic waves to transfer data to and from a traditional robot. However, these traditional communication means impose undesirable limits on range, data rate and communication quality. For instance, traditional wireless communication technologies suffer from the following undesirable characteristics”); determining means for determining the action on the basis of the

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communication quality measured by the measuring means (see abs. and col. figs. 9-10, wherein the robot 902 has interpreted as means for determining the action/movement/work and col. 19, lines 19-25 as noted above), and the instruction from the user (see col. 11, lines 34-40, particularly "It can be shown theoretically, using signal-to-noise arguments, that thousands of simultaneous channels are available to an impulse radio system as a result of its exceptional processing gain. The average output signal-to-noise ratio of the impulse radio may be calculated for randomly selected time-hopping codes as a function of the number of active users, N_u , as:..." as shown evidence of a user giving instruction to the robot, besides "thousands of simultaneous channels are available to an impulse radio system as a result of its exceptional processing gain" measuring/determining communication quality); and processing means for performing the action determined by the determining means (see fig. 13, element 1306, col. 1, lines 51-63, particularly "a system, a robot and a method are provided that use the communication capabilities of impulse radio technology to help a control station better control the actions of the robot.", and col. 11, lines 34-40,); and with respect to claim 5, the program is embedded in a computer readable medium for executing all the above mentioned limitations. Although, Glenn et al. teaches loss of radio communication (see col. col. 1, lines 12-32, particularly "Unfortunately, problems have arisen in the past with the use of standard radio equipment because there are often problematical "dead zones" within a building that may interfere with the communications between the control station and a moving robot."); but Glenn et al. does not specifically teach a radio signal wherein when the communication quality measured by the measuring means indicates loss of radio communication with the communication apparatus, the robot apparatus physically communicates the loss of radio communication to the user and requests another instruction from the user.

Fraser et al. teaches radio signal wherein when the communication quality measured by the measuring means indicates loss of radio communication with the communication apparatus (see section [0002 and 0004], particularly “Analog standards may not adequately govern data transmission across landline networks, making it difficult to set carrier levels in order to maintain proper data transmission. Excessively low carrier levels may not be detected by the receiver. Low carrier levels may be difficult to separate from noise in the system, *resulting in data transfer errors or loss of signal*. Carrier levels that are too high may cause excessive noise due to, for example, echo cancellation within the wireless and wire line networks. These conditions may also result in data transfer errors.”), the robot apparatus physically communicates the loss of radio communication to the user and requests another instruction from the user (see sections [0002, 0004, 0027, 0031], note that mobile communication device 110 has been interpreted as phone that receives and send voice communication to its station by the user/operation, besides section 0031 discloses “vehicle communications processor (MP) located at mobile communication device 110 originates a call. The call may be originated automatically, or in response to a request of an operator or occupant.”).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the robot (see abs., particularly the robot) type of Glenn et al., with the radio communication type of Fraser et al., because this modification would have provided the well known loss radio communication features Glenn’s et al., thereby improving the efficiency and the reliability of the system and method of information processing of a robot (see abs., particularly the robot).

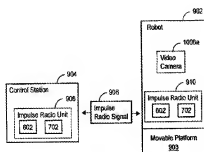


Fig.10

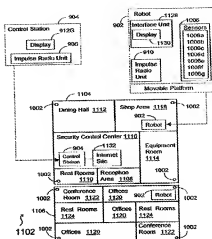


Fig.11

As per claim 2, **Glenn et al.** teaches a robot (see abs., particularly the robot) that uses impulse radio (see abs., particularly “impulse radio”) technology wherein the determining means determines the action on the basis of the details of the current action of the robot (see abs., particularly the robot as noted above) apparatus and the communication quality measured by the measuring means (see col. 19, lines 19-25 as noted above).

As per claims 3, 7, 10 and 11, Glenn et al., teaches a robot (see abs., particularly the robot) that uses impulse radio (see abs., particularly “impulse radio”) technology wherein the determining means determines the generation of predetermined speech, and the processing means outputs the speech through a speaker (see col. 15, lines 66 -- to -- col. 16, line -3, wherein using speaker for outputting sound in robotics being considered as known in the art. See flakey for instance).

As per claim 6, **Glenn et al.** teaches a robot (see abs., particularly the robot) wherein the radio signals measured for a predetermined time and for a predetermined threshold (see figs. 1A-

1D, it is known that these radio pulse signals have been measured at predetermined time; Note that -4 to +4 has been interpreted as predetermined time).

As per claim 8, Glenn et al. teaches a robot (see abs., particularly the robot) wherein measuring is supplied from sensors (see Fig. 11, element 1006a which contains a plurality of sensors).

As per claim 9, Glenn et al. teaches a robot (see abs., particularly the robot) wherein measuring means outputs state recognition information for the sensors (see Fig. 11, element 902 and 1006 which contains a plurality of sensors).

As per claim 12, Glenn et al. teaches a robot (see abs., particularly the robot) wherein a next action based on the state recognition information from a storage means and elapse time (see Fig. 11, element 1006a, wherein by design choice a video camera contain all the above features).

As per claim 13, Glenn et al. teaches a robot (see abs., particularly the robot) wherein the communication quality includes signal strength corresponding to resistance to noise or error rate in a communication packet due to burst interference (see col. 14, lines 37-58, particularly "Power control systems comprise a first transceiver that transmits an impulse radio signal to a second transceiver. A power control update is calculated according to a performance measurement of the signal received at the second transceiver. The transmitter power of either transceiver, depending on the particular setup, is adjusted according to the power control update. Various performance measurements are employed to calculate a power control update, including bit error rate, signal-to-noise ratio, and received signal strength, used alone or in combination. Interference is thereby reduced, which may improve performance where multiple impulse radios are operating in close

proximity and their transmissions interfere with one another. Reducing the transmitter power of each radio to a level that produces satisfactory reception increases the total number of radios that can operate in an area without saturation. Reducing transmitter power also increases transceiver efficiency.”).

As per claims 14-17, **Fraser et al.** teaches in combination Glenn et al. a system wherein the apparatus notifies the user of the loss of radio communication using functions peculiar to the robot apparatus (see fig. 1, element has been interpreted as robot and sections [0002, 0004, 0027, 0031]); wherein the apparatus notifies the user of the loss of radio communication using speech (see sections [0002, 0004, 0027, 0031] as noted above); wherein the apparatus notifies the user of the loss of radio communication via a gesture (see sections [0002, 0004, 0027, 0031 and 0038], wherein the gesture has been interpreted as voice communication); wherein the apparatus is in standby state after notifying the user of the loss of radio communication until receiving an instruction from the user (see section [0031], wherein the instruction broadly being considered performing at any period after communication loss).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the robot (see abs., particularly the robot) type of Glenn et al., with the radio communication type of Fraser et al., because this modification would have provided the well known loss radio communication features into Glenn’s et al., thereby improving the efficiency and the reliability of the system and method of information processing of a robot (see abs., particularly the robot).

Response to Arguments

7. As to the reference not teaching a loss of radio communication (see Glenn's et al. col. col. 1, lines 12-32, particularly "Unfortunately, problems have arisen in the past with the use of standard radio equipment because there are often problematical "dead zones" within a building that may interfere with the communications between the control station and a moving robot.");

As to the reference not teaching robot apparatus communicating loss of radio communication with a communication apparatus (see Glenn's et al. col. col. 1, lines 12-32, wherein the "dead zones"/loss of communication between the control station and the moving robot has shown clear evidence of the required limitations);

As to the reference not teaching physically communicating the loss of radio communication to a user see sections (see section [0002 and 0004]);

As to the reference not teaching when communication quality indicates a loss of radio communication, the robot apparatus requests another instruction from a user (see Fraser et al. sections [0002, 0004, 0027 and 0031]).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MCDIEUNEL MARC whose telephone number is (571)272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on (571) 272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/McDieunel Marc/
Examiner, Art Unit 3664
/KHOI TRAN/
Supervisory Patent Examiner, Art Unit 3664